

What is claimed is:

1. A display device comprising:

a first member including a first substrate and a first electrode;

5 a second member coupled to the first member, the second member including a second substrate and a capacitor formed on the second substrate;

a spacer positioned between the first member and the capacitor for forming a cell gap between the first member and the second member, and

liquid crystals positioned in the cell gap.

10 2. The device of Claim 1, wherein the second member further comprises a second electrode positioned on the capacitor, wherein the spacer is adjacent to the first and the second electrodes.

15 3. The device of Claim 1, wherein the second member further comprises a dielectric layer deposited on the capacitor, a contact hole formed above the capacitor and extending through the dielectric layer, and a second electrode formed in the contact hole, wherein the spacer is positioned adjacent to the second electrode outside the contact hole.

20 4. The device of Claim 1, wherein the second member further comprises a dielectric layer deposited on the capacitor, a contact hole formed above the capacitor and extending through the dielectric layer, and a second electrode formed in the contact hole, wherein the spacer is positioned adjacent to a portion of the second electrode that is located in the contact hole.

5. The device of Claim 1, wherein the second member further comprises:
a thin film transistor; and
a second electrode for electrically coupling the thin film transistor to the capacitor.

5 6. The device of Claim 1, wherein the spacer is a column spacer.

7. The device of Claim 1, wherein the capacitor is located in a noneffective display area with substantially no light transmission.

10 8. A display device comprising:
a first member including a first substrate and a first electrode;
a second member coupled to the first member, the second member including a second substrate, a dielectric layer deposited on the substrate, and a contact hole extending through the dielectric layer;
15 a spacer positioned between the first member and the contact hole for forming a cell gap between the first member and the second member; and
liquid crystals positioned in the cell gap.

9. The device of Claim 8, wherein the second member further comprises a
20 second electrode positioned on the dielectric layer and in the contact hole, wherein the spacer is adjacent to the first and the second electrodes.

10. The device of Claim 8, wherein the spacer extends into the contact hole.

11. The device of Claim 8, wherein the spacer is positioned outside of the contact hole covering the contact hole.

12. The device of Claim 11 further comprising one of liquid crystals and air inside
5 the contact hole enclosed by the spacer.

13. The device of Claim 8 further comprising a black matrix positioned near the spacer to prevent the spacer from affecting an image projection.

10 14. The apparatus of Claim 8 further comprising a plurality of spacers located within a display region, said plurality of spacers including the spacer, and wherein a distance between neighboring spacers is a function of an exact location of the spacers in the display region.

15 15. The apparatus of Claim 8 further comprising a plurality of spacers located within a display region, said plurality of spacers including the spacer, and wherein a distance between neighboring spacers decreases as the spacers approach a center of the display region.

20 16. The device of Claim 15 further comprising a sealant layer formed along a periphery of the display region, and wherein the distance between neighboring spacers varies as a function of the spacers' positions relative to the sealant layer.

17. The device of Claim 8, wherein the spacer is a column spacer.

18. A method of making a display device, the method comprising:

obtaining a first member including a first substrate and a first electrode;

coupling a second member to the first member, the second member including a

5 second substrate and a capacitor formed on the second substrate;

positioning a spacer between the first member and the capacitor to form a cell gap;

and

placing liquid crystals in the cell gap.

10 19. The method of Claim 18 further comprising:

forming a contact hole coupled to the capacitor;

depositing a second electrode in the contact hole; and

positioning the spacer in the contact hole such that the spacer is adjacent to the first
electrode and the second electrode in the contact hole.

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20. The method of Claim 18 further comprising:

forming a contact hole coupled to the capacitor; and

positioning the spacer outside the contact hole, wherein the spacer covers the
contact hole.

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21. A method of making a display device, the method comprising:

obtaining a first member including a first substrate and a first electrode;

coupling a second member to the first member, the second member including a
second substrate, a dielectric layer deposited on the second substrate, and a contact hole

extending through the dielectric layer;

positioning a spacer between the first member and the contact hole to form a cell gap; and

placing liquid crystals in the cell gap.

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22. The method of Claim 21 further comprising positioning the spacer in the contact hole such that the spacer is adjacent to the first electrode and a base of the contact hole.

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23. The method of Claim 21 further comprising positioning the spacer outside the contact hole, wherein the spacer covers the contact hole.

24. A method of arranging a plurality of spacers in a display device, the method comprising:

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coupling a first substrate and a second substrate with a sealant layer; and

arranging the spacers such that a distance between neighboring spacers decreases as a function of a distance away from the sealant layer.

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